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1: AIDS 1998 Nov 12;12(16):2107-13

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**Association of HLA profiles with early plasma viral load, CD4+ cell count and rate of progression to AIDS following acute HIV-1 infection. Multicenter AIDS Cohort Study.**

**Saah AJ, Hoover DR, Weng S, Carrington M, Mellors J, Rinaldo CR Jr, Mann D, Apple R, Phair JP, Detels R, O'Brien S, Enger C, Johnson P, Kaslow RA.**

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**BACKGROUND:** Host genetic factors, such as HLA alleles, play an important role in mediating the course of HIV-1 disease progression through largely undefined mechanisms. **Objectives:** To examine the association of HLA markers with HIV-1 RNA plasma viral load and other factors associated with course of disease progression in HIV-1 infection. **DESIGN AND METHODS:** A group of 139 HIV-1 seroconverters from the Multicenter AIDS Cohort Study had been typed for a variety of HLA markers. HIV-1 RNA plasma viral load was measured from frozen plasma specimens obtained approximately 9 months following seroconversion. CD4+ cell counts were available from the same study visit. Statistical analysis was performed using survival techniques and linear regression models to quantify the relative associations of an HLA score profile, HIV-1 RNA plasma viral load, CD4+ cell count and age with each other and with rate of progression to AIDS and death. **RESULTS:** Cox proportional hazards models showed statistically significant differences in time to AIDS by HLA score profile category per unit increase [relative hazard (RH), 0.64;  $P < 0.0001$ ], HIV-1 RNA plasma viral load per 10-fold increase (RH, 2.04;  $P =$

0.0003), and CD4+ cell count per 100 cell ( $\times 10(6)/l$ ) increase (RH, 0.90;  $P = 0.02$ ). Multivariate linear regression showed that viral load was 39% lower ( $P = 0.0001$ ) for each unit increase in HLA score profile and 13% lower ( $P = 0.002$ ) for each 100 cell ( $\times 10(6)/l$ ) increase in CD4+ cell count.

**CONCLUSION:** The means by which the HLA score profile influences the time to AIDS is probably through immunologic responses that affect the rate of HIV-1 replication, as manifested by the HIV-1 RNA plasma viral load during the first 6-12 months following acute infection.

Publication Types:

- Multicenter Study

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